<center>**REMARKS**</center>

Claims 1 and 3-23 are pending in the application. Claims 1, 9, 17, and 21 are independent. By the foregoing Amendment, claims 1, 9, 17, and 21 have been amended. These changes are believed to introduce no new matter and their entry is respectfully requested.

<center><u>Rejection of Claims 1, 3, 8-12, 17-19, and 21-22 Under 35 U.S.C. §103(a)</u></center>

In the Office Action, the Examiner rejected claims 1, 3, 8-12, 17-19 and 21-22 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,953,520 to Mallick (hereinafter "*Mallick*") in view of U.S. Patent No. 6,275,917 to Okada (hereinafter "*Okada*"). Applicant respectfully traverses the rejection.

To establish a *prima facie* case of obviousness, the Examiner must show that the cited references teach each and every element of the claimed invention. (MPEP §2143 *citing In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art. *KSR Int'l C. v. Teleflex, Inc.*, No 04-1350 (U.S. Apr. 30, 2007). If a combination or modification to a reference is used, an Examiner must show that there is some expectation of success that the combination or modification proffered would predictably result in the claimed invention. Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the U.S. Supreme Court in *KSR* include the *Graham* factors of determining the scope and content of the prior art, ascertaining the differences between the claimed invention and the prior art, and resolving the level of ordinary skill in the pertinent art.

Once the *Graham* factual inquiries are resolved, the Examiner must explain the reasoning that provides a nexus between the factual findings and the legal conclusion of obviousness. The rationale used must be a permissible rationale. The USPTO promulgated Examination Guidelines for Determining Obviousness in View of *KSR* in the Federal Register, Vol. 72, No. 195 (October 10, 2007). These *KSR* Guidelines enumerate permissible rationales and the findings of fact that must be made under the particular rationale. Applicant respectfully notes that no matter which rationale is used, the burden still remains on the Examiner to demonstrate each prong of the

***three-part test***: (1) that each and every element is taught; (2) that one skilled in the art could have combined the references; and (3) that there is predictability/expectation of success.

Independent claim 1 recites in pertinent part "receiving a virtual page number lookup request at a virtual Translation Lookaside Buffer (TLB), wherein the virtual TLB includes an instruction TLB and a data TLB, wherein the TLB is configured to operate in a processor having an ***Xscale core architecture***; performing a lookup of the virtual page number in the virtual TLB, wherein performing the lookup of the virtual page number includes performing the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously; and returning a physical page number corresponding to the virtual page number in the virtual TLB" (emphasis added). Independent claims 9, 17, and 21 recite similar language. Support for these changes according to at least one embodiment can be found in Applicant's Specification at page 5, lines 1-6.

In the Office Action, the Examiner states that *Mallick* discloses a method comprising receiving a virtual page number lookup request at a virtual Translation Lookaside Buffer (TLB) (receiving logical addresses at MMUs 56 and 58), wherein the virtual TLB includes an instruction TLB and a data TLB (the combination of ITLB 59 and DTLB 57), performing a lookup of the virtual page number in the virtual TLB, and returning a physical page number corresponding to the virtual page number in the virtual (i.e., if a miss occurs, then an exception is taken and the page table is searched for the matching page table entry (PTE). The Examiner concedes that *Mallick* fails to disclose performing the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously, but cites *Okada* for disclosing performing address translation (i.e., searching in TLB) in both ITLB and DTLB in parallel, citing col. 4, lines 50-55, and col. 8, lines 21-24. The Examiner then concludes that it would have been obvious to implement the teaching of *Okada* in the method taught by *Mallick* so the lookup is performed in parallel instead of one-by-one so the overall translation process is expedited, especially when there is no match found in the first TLB. Applicant respectfully disagrees.

*Mallick* and *Okada* appear to operate as follows. First, there is a lookup in the TLB to see whether or not the virtual address is present in the TLB. If the virtual address is present in the

TLB ("hit"), then a translation is performed from the virtual address to a physical address. That is, this is a two-step process: (1) lookup and (2) translation. The Examiner concedes that the lookup is not performed in both the ITLB and the DTLB simultaneously in *Mallick*. Applicant respectfully submits that this is also the case in *Okada*. That is, *Okada* at best only appears to **translate** in parallel. It does not appear to perform the **lookup** in parallel.

In any event, Applicant respectfully submits that *Mallick* in view of *Okada* fails to disclose a TLB configured to operate in a processor having an Xscale core architecture. *Mallick* mentions specific architectures; however none of them is an Xscale core architecture. *Okada* doesn't mention any architecture at all. Applicant respectfully submits that because *Mallick* in view of *Okada* fails to disclose a TLB configured to operate in a processor having an Xscale core architecture claims 1, 9, 17, and 21 are patentable over *Mallick* in view of *Okada*.

It must be noted that if a claim properly depends from a patentable claim, that claim also is patentable. (MPEP §2143.03 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). Claims 3 and 8 properly depend from claim 1 and are thus patentable for at least the same reasons that claim 1 is patentable. Claims 10-12 properly depend from claim 9 and are thus patentable for at least the same reasons that claim 9 is patentable. Claims 18-19 properly depend from claim 17 and are thus patentable for at least the same reasons that claim 17 is patentable. Claims 22 properly depends from claim 21 and is thus patentable for at least the same reasons that claim 21 is patentable. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 1, 3, 8-12, 17-19, and 21-22.

Rejection of Claims 4-7, 13-16, 20, and 23 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 4-7, 13-16, 20, and 23 under 35 U.S.C. §103(a) as being obvious over *Mallick* in view of *Okada* in further view of U.S. Patent Publication No. 2007/0094476 to Augsburg et al. (hereinafter *"Augsburg"*). Applicant respectfully traverses the rejection.

Claims 4-7 properly depend from claim 1 and are thus patentable for at least the same reasons that claim 1 is patentable. (MPEP §2143.03 (citing *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988)). Claims 13-16 properly depend from claim 9 and are thus patentable for at least the same reasons that claim 9 is patentable. Claim 20 properly depends from claim 9 and is thus patentable for at least the same reasons that claim 9 is patentable. Claim 23 properly depends from claim 21 and is thus patentable for at least the same reasons that claim 21 is patentable. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 4-7, 13-16, 20, and 23.

# CONCLUSION

Applicant respectfully submits that all grounds for rejection have been properly traversed, accommodated, or rendered moot and that the application is now in condition for allowance. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

Respectfully submitted,

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_____June 8, 2009_____             _____/Jan Little-Washington/_____
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I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below.

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